

Pushing the Envelope			
2003 Mathematics			
Standard Course of Study			
North Carolina Mathematics			
Grade 5			
Activity/Lesson	State	Standards	
Physics and Math (pgs. 43-63)	NC	MA.5.5.03	Identify, describe, and analyze situations with constant or varying rates of change.
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2003 Mathematics			
Standard Course of Study			
North Carolina Mathematics			
Grade 6			
Activity/Lesson	State	Standards	
Types of Engines (pgs. 11-23)	NC	MA.6.2.01	Estimate and measure length, perimeter, area, angles, weight, and mass of two- and three-dimensional figures, using appropriate tools.
Physics and Math (pgs. 43-63)	NC	MA.6.5.04	Use graphs, tables, and symbols to model and solve problems involving rates of change and ratios.
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2003 Mathematics			
Standard Course of Study			
North Carolina Mathematics			
Grade 7			
Activity/Lesson	State	Standards	
Types of Engines (pgs. 11-23)	NC	MA.7.5.04	Develop fluency in the use of formulas to solve problems.
Chemistry (pgs. 25-41)	NC	MA.7.2.02	Solve problems involving volume and surface area of cylinders, prisms, and composite shapes.
Chemistry (pgs. 25-41)	NC	MA.7.5.04	Develop fluency in the use of formulas to solve problems.
Physics and Math (pgs. 43-63)	NC	MA.7.1.01	Develop and use ratios, proportions, and percents to solve problems.
Physics and Math (pgs. 43-63)	NC	MA.7.3.03	Use scaling and proportional reasoning to solve problems related to similar and congruent polygons.
Physics and Math (pgs. 43-63)	NC	MA.7.5.01	Identify, analyze, and create linear relations, sequences, and functions using symbols, graphs, tables, diagrams, and written descriptions.
Physics and Math (pgs. 43-63)	NC	MA.7.5.04	Develop fluency in the use of formulas to solve problems.
Rocket Activity (pgs. 69-75)	NC	MA.7.5.04	Develop fluency in the use of formulas to solve problems.
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North Carolina Mathematics			

Grade 8			
Activity/Lesson	State	Standards	
Chemistry (pgs. 25-41)	NC	MA.8.2.01	Determine the effect on perimeter, area or volume when one or more dimensions of two- and three-dimensional figures are changed.
Physics and Math (pgs. 43-63)	NC	MA.8.5.01.a	Translate among verbal, tabular, graphic, and algebraic representations of functions.
Physics and Math (pgs. 43-63)	NC	MA.8.5.01.c	Find, identify, and interpret the slope (rate of change) and intercepts of a linear relation.
Physics and Math (pgs. 43-63)	NC	MA.8.5.01.d	Interpret and compare properties of linear functions from tables, graphs, or equations.
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2003 Mathematics			
Standard Course of Study			
North Carolina Mathematics			
Grades 9-12 (Introductory Mathematics)			
Activity/Lesson	State	Standards	
Chemistry (pgs. 25-41)	NC	MA.9-12.2.01	Determine the effect on perimeter, area or volume when one or more dimensions of two- and three-dimensional figures are changed.
Physics and Math (pgs. 43-63)	NC	MA.9-12.4.01.a	Translate among verbal, tabular, graphic, and algebraic representations of functions.
Physics and Math (pgs. 43-63)	NC	MA.9-12.4.01.c	Find, identify, and interpret the slope (rate of change) and intercepts of a linear relation.
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2003 Mathematics			
Standard Course of Study			
North Carolina Mathematics			
Grades 9-12 (Algebra 1)			
Activity/Lesson	State	Standards	
Types of Engines (pgs. 11-23)	NC	MA.9-12.1.02	Use formulas and algebraic expressions, including iterative and recursive forms, to model and solve problems.
Chemistry (pgs. 25-41)	NC	MA.9-12.1.02	Use formulas and algebraic expressions, including iterative and recursive forms, to model and solve problems.
Physics and Math (pgs. 43-63)	NC	MA.9-12.1.02	Use formulas and algebraic expressions, including iterative and recursive forms, to model and solve problems.
Rocket Activity (pgs. 69-75)	NC	MA.9-12.1.02	Use formulas and algebraic expressions, including iterative and recursive forms, to model and solve problems.
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2003 Mathematics			
Standard Course of Study			
North Carolina Mathematics			
Grades 9-12 (Geometry)			
Activity/Lesson	State	Standards	
Physics and Math (pgs. 43-63)	NC	MA.9-12.1.01	Use the trigonometric ratios to model and solve problems involving right triangles.

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2003 Mathematics			
Standard Course of Study			
North Carolina Mathematics			
Grades 9-12 (Technical Mathematics 1)			
Activity/Lesson	State	Standards	
Types of Engines (pgs. 11-23)	NC	MA.9-12.1.01.c	The learner will apply various strategies to solve problems. Select and apply appropriate formulas.
Chemistry (pgs. 25-41)	NC	MA.9-12.1.01.c	The learner will apply various strategies to solve problems. Select and apply appropriate formulas.
Chemistry (pgs. 25-41)	NC	MA.9-12.2.03	Use the length, area, and volume of geometric figures to solve problems. Include arc length, area of sectors of circles; lateral area, surface area, and volume of three-dimensional figures; and perimeter, area, and volume of composite figures.
Physics and Math (pgs. 43-63)	NC	MA.9-12.1.01.c	The learner will apply various strategies to solve problems. Select and apply appropriate formulas.
Rocket Activity (pgs. 69-75)	NC	MA.9-12.1.01.c	The learner will apply various strategies to solve problems. Select and apply appropriate formulas.